

REMARKS

Claims 1-42 are all the claims pending in the application.

PRIOR ART REJECTIONS

The Examiner has rejected claims 1-42 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art (APA), and in view of Beamish et al. (U.S. Patent No. 6,256,476). Applicant traverses the rejections because the asserted art fails to disclose or suggest all of the claim limitations. Specifically, with respect to the independent claims, at least the following limitations are not disclosed or suggested:

1. a communication monitor circuit for *detecting quality deterioration of radio communication with mobile stations*

6. a communication state monitor circuit coupled to said receivers for *detecting quality deterioration of a communication state of radio communication between said base station and said mobile stations*

14. a communication state monitor circuit coupled to said receivers for *detecting quality deterioration of a communication state of radio communication between said base station and said mobile stations*

22. monitoring, at said base station, *a communication state of radio communication between said base station and said mobile stations*

27. detecting, at said base station, *quality deterioration of a communication state of radio communication between said base station and said mobile stations*

35. a receiver which demodulates transmission signals transmitted from *plural mobile stations*;

a communication state monitor, coupled to said receiver, *which detects a deterioration of a communication state of radio communication between said base station and the plural mobile stations*;

37. a receiver which receives, from the base station, a transmission power control signal directing to decrease a power of the signal to be transmitted to the base station in the case where *a deterioration of a communication state of radio communication between the base station and the plural mobile stations is detected at the base station*;

39. a communication state monitor, coupled to said receiver, which *detects a deterioration of a communication state of radio communication between said base station and said plural mobile stations*;

40. detecting, at the base station, *a deterioration of a communication state of radio communication between said base station and the plural mobile stations*

41. receiving, from the base station, a transmission power control signal directing to decrease a power of the signal to be transmitted to the base

station in the case *where a deterioration of a communication state of radio communication between the base station and the plural mobile stations is detected at the base station*

42. detecting, at the base station, *a deterioration of a communication state of radio communication between said base station and the plural mobile stations*

First, the Examiner concedes that the APA fails to disclose the above limitations. In order to overcome these deficiencies, the Examiner cites to Beamish et al. However, as discussed below, Beamish et al. does not disclose or suggest the missing limitations.

Beamish et al. is directed to cordless telephones consisting of *one* mobile unit (or handset) and a base station. Col. 1, lines 16-18; figure 1. As a result, Beamish et al. discloses a base station that measures the quality of the signals from one mobile unit. On the other hand, the claimed invention requires that the base station monitor the communication state of a *plurality* of mobile stations. Thus the claimed “communication state of said radio communication” refers to the quality of a group of individual communications between the mobile stations and the base station. The quality determination feature/circuit in Beamish et al. is more comparable to the SNR determining circuit in figures 1, 4, 8, 10 and 13, which monitors the quality of an individual communication between one mobile unit and the base station, rather than the communication state monitoring circuit, which monitors the quality of a plurality of individual communications between a plurality of mobile units and the base station.

To support the Examiner's position that Beamish discloses detecting the communication state of a *plurality* of mobile stations, the Examiner cites to col. 6, lines 6-17, col. 7, lines 4-37 and figures 4A and 4B. The cited portions of columns 6 and 7 are shown below. However, nowhere in those portions is there a disclosure or suggestion of a plurality of mobile stations. Likewise, figures 4A and 4B also fail to disclose or suggest a plurality of mobile stations.

FIG. 4A is a block diagram 400 showing the operation of a slow power control 405 used in some current wireless systems. The slow power control 405 is a software control system operated by the base station 104. The block diagram 400 of FIG. 4A is an illustration of the slow power control 405 as it functions in the base station 104. The slow power control 405 instructs the transceiver 120 of the mobile unit 106 at which power level to transmit the transmission frames 304. Col. 6, lines 9-17

FIG. 4B illustrates a block diagram 440 showing the fast power control 450 according to one embodiment of the present invention. The slow power control 405 operates with respect to the low power level 415 and the medium power level 420 in the same manner as described with reference to FIG. 4A. However, when the slow power control 405 determines the signal quality has reached the second threshold, the slow power control 405 through the switch 410 activates the fast power control 450. The fast power control 450 has a switch 455 which selects between the high power level 425 and a medium/high power level 460.

As with the switch 410, the switch 455 is merely representative of how the fast power control 450 selects between power levels. The selection may be accomplished in a variety of manners, including running a separate subroutine for each power level, setting a flag indicating at which power level to transmit, or using a logic sequence to identify the proper power level. The medium/high power level 460 is a level between the medium power level 420 and the high power level 425. In one embodiment of the invention, the medium/high power level 460 is 13 dBm.

In operation, the switch 455 of the fast power control 450 defaults to the medium/high power level 460. As will be described below in greater detail, the fast power control 450 measures the signal quality during every data frame. If, during any data frame, the signal quality falls below a preset threshold, the switch 455 of the fast power control 450 will activate the high power level 425 and instruct the mobile unit 106 to transmit at the high power level 425. After the mobile unit 106 transmits at the high power level 425, the mobile unit 106

automatically resets the switch 455 to transmit at the medium/high power level 460. Only another instruction by the fast power control 450 causes the mobile unit 106 to transmit at the high power level 425. Col. 7, lines 4-37.

Regarding the dependent claims, they should be allowable at least based on their dependence from the independent claims above for at least the same reasons. In addition, regarding claims 2, 5, 10, 13, 18, 21, 23, 26, 31 and 34, each of these claims require that the total interference electric power be monitored. Neither the APA nor Beamish et al. disclose or suggest monitoring or measuring the total interference electric power of a plurality of communications between a plurality of mobile stations and a base station.

Likewise, regarding claims 3, 11, 19, 24 and 32, each of these claims require that signal to noise ratios be monitored. Neither the APA nor Beamish et al. disclose or suggest monitoring or measuring signal to noise ratios of a plurality of communications between a plurality of mobile stations and a base station.

Likewise, regarding claims 4, 12, 20, 25 and 33, each of these claims require that the TPC bit signals be monitored. Neither the APA nor Beamish et al. disclose or suggest monitoring or measuring the TPC bit signals of a plurality of communications between a plurality of mobile stations and a base station.

Finally, regarding claims 7, 15 and 28, each of these claims require that an increase in transmission power is suppressed when the quality of transmission decreases. Beamish does disclose decreasing transmission power. However, the decrease is not based a decrease in transmission quality.

RESPONSE UNDER 37 C.F.R. §1.116
USSN: 09/924,723

Q65824

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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23373

CUSTOMER NUMBER

Date: March 28, 2005